

REMARKS

The Examiner's action dated February 10, 2005, has been received, and its contents carefully noted.

The rejection presented in section 3 of the Action is traversed for the reason that the rejected claims, and particularly independent claim 18, clearly distinguish patentably over any reasonable combination of the teachings of the applied references.

Claim 18 has been amended to more clearly define the contribution of the invention over the prior art. Specifically, claim 18 has been amended to recite a network controller for controlling operations of all of said nodes. Support for this recitation will be found in the Specification at page 13, line 25 to page 14, line 10. Claim 18 has further been amended to specify that each of the communication links has only two electrical conductors carrying a single communication channel. As pointed out in the previous Amendment, support for this recitation will be found in the Specification at page 10, lines 19-22.

Thus, claim 1, as amended, is directed to a communication network comprising at least three nodes and two communication links, where each of the communication links has only two electrical conductors carrying a single communication

channel and a network controller that controls the operation of all of the nodes.

In the Blatter system, each node is connected to receive two distinct signals, a clock signal and a data signal, which requires the provision of at least three conductors. These conductors obviously carry two different signals. Moreover, each of these signals is independently controlled. Furthermore, in the Blatter system, the data and clock signals travel in two different directions, which is different from the half duplex operation defined in claim 18 of the present Application.

Gotz shows, in Figure 3, a "repeater" having input and output lines constituted by optical fibers, rather than electrical conductors. The data stream arriving at this unit obviously consists of one or more data signals and a data clock signal.

Thus, neither of these references discloses a network composed of communication links each having only two electrical conductors carrying a single communication channel.

Furthermore, Blatter does not disclose a system having a network controller that controls operation of all of the nodes in the system. Rather, according to this reference, arbitration logic within each node controls each communication link independently to determine its data flow direction.

The rejection is based on the view that it would have been obvious to identify the pass or transfer mode of Blatter as a repeating mode in view of the teachings of Gotz. However, even though the Gotz reference uses the term "repeater", it is clear that the devices disclosed in this reference, including the device shown in Figure 3, do not perform a repeater function. As is known in the art, and described in the present Application and in the Blatter reference, a repeater transfers data transparently, substantially unchanged. In the device shown in Figure 3 of Gotz, the data arriving at receiver 9 is clearly different from that supplied to transmitter 16. Specifically, an auxillary signal D_{B1} is extracted from the incoming data and replaced by a different auxillary signal D_{B2} before being delivered to the transmitter. Thus, this unit cannot be regarded as a repeater. It will be noted that each of the units shown in Figures 2 and 4 of this reference also acts to remove or add a signal within the unit.

Furthermore, it is submitted that one skilled in the art would have no motivation to combine the teachings of the references, so that such combination cannot properly be considered obvious. The operation carried out in the node shown in Figure 2 of Blatter is entirely different from that carried out in the unit shown in Figure 3 of Gotz. In

Blatter, serial data is converted to parallel form in order to supply it to a parallel data bus 25 and store that data in a parallel-access memory 30 which allows equipment 40 to access the data. The Gotz unit is incapable of performing such a function. Furthermore, the Blatter reference is concerned with devices employed in a local area network, whereas optical fiber-based networks of the type disclosed by Gotz are used in wide area networks. It is known in this field that the two different types of networks operate in fundamentally different ways and have fundamentally different requirements and limitations.

The rejection of application claim 21 is based on the disclosure at page 11, line 13 of Blatter. However, according to the disclosure in that part of the reference, a ring network can be established only if "one of the nodes on the ring is designated as the master node." Such a limitation functionally converts the ring topology to a linear topology since there can be no data transfer between the ports of the master node. A network according to the present invention supports true ring topology with out any need to make a distinction between one node and another.

The rejection presented in section 4 of the Action is also traversed.

This rejection is based on the references relied upon in the rejection presented in section 3 of the Action, together with the U.S. Patent to Markkula. In the explanation of the rejection, reference is made to Figure 2 of Markkula. Since that figure simply shows a logical diagram that does not include any power supply or coupler, it is assumed that reference to Figure 1 was intended.

This rejection is traversed, one reason being that one skilled in the art would have no motivation to combine the teachings of Markkula with those of the other applied references. Markkula only discloses a bus topology, wherein each of the nodes has a single port for connecting to the data and power carried by the network. The disclosure of this reference is limited to the simple case in which the power source is known and a port is only used as a power sink. In contrast, according to the present invention, as well as according to the disclosure of Blatter, there is provided a linear or daisy-chain topology wherein each node has two ports and each port may be a power sink or a power source for the connected node. A simple power supply cannot be used in such arrangements since it is not known which port will be connected to the power source and which port will supply power to the next node.

It thus appears that the Markkula reference was arbitrarily selected because of its disclosure of the supply of power, but that, in reality, those skilled in the art would have no logical reason to utilize the teaching of Markkula in connection with the systems disclosed by Blatter and Gotz. Thus, claims 22 and 23 distinguish over the applied references by the fact that they depend from claim 18 and specify that the network comprises at least one source of electrical power.

As regards the rejection of claims 29 and 35, claim 29 has been amended to specify that the node contains a single driver having an input and a single receiver having an output coupled to the driver input. In contrast, each node of the Blatter system has two distinct drivers and two distinct receivers, in that each of the elements 10R and 10L contains a driver and a receiver. If a node of the Blatter reference were modified to include a single driver and a single receiver, the node would be incapable of performing its intended functions. It is well recognized that it cannot be considered to be obvious to modify a reference device in a manner that destroys its intended utility.

The rejection of claims 32 and 33 as unpatentable over the references discussed above, in further view of Abe, is also traversed. The patent to Abe is directed to a vehicle

Appln. No. 09/349,020
Amd. dated April 27, 2005
Reply to Office Action of February 10, 2005

network, which is of no relevance to networks of the type disclosed in the other applied references.

Furthermore, these claims should be considered allowable in view of their dependency from claim 29.

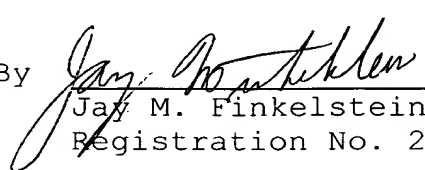
In view of the foregoing, it is requested that all of the rejections of record be reconsidered and withdrawn, that the pending claims be allowed and that the Application be found in allowable condition.

If the above amendment should not now place the application in condition for allowance, the Examiner is invited to call undersigned counsel to resolve any remaining issues.

Respectfully submitted,

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